System Tables and Their Uses

Downloadability

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There are 32 tables defined in a table directory that is located at $100000 in 133A-based stations and $400000 in 162-based stations. This list briefly identifies each in terms of their candidacy for downloading. Tables numbered 0–31 are described.

ADATA EQU 0 ;Analog data

Contains settings and alarm info about all channels. To download settings properly, setting messages should be sent for each controllable channel. If this table is downloaded directly, then a system reset must be performed to cause the settings to be issued to the hardware. Note: This "automatic restore of settings" at reset time can be *inhibited* by the setting of option switch #6, which is on the crate utility board in 133A-based systems, or on the front panel in 162-based IRMs. Under normal conditions, this switch should *not* be set.

ADESC EQU 1 ;Analog descriptors

These records contain scale factors, names, and text for all channels. Can be downloaded record by record. The name hash table is automatically filled during downloading as well as following a system reset. If the table is downloaded directly, this name inserteion is not performed, and a system reset will be necessary to correctly populate the name hash table.

BALRM EQU 2 ;Binary alarm status

These are binary alarm flag words and trip counts for every binary bit. They can be downloaded, if desired. Note: Acnet does not use binary bit-based alarms. But there may be silent bit alarms that are used for keeping diagnostic trip counts. In Acnet, binary alarms are based upon "combined status words."

BDESC EQU 3 ;Binary bit titles

Every bit has a 16-character title or description in this table. It can be downloaded anytime. Acnet doesn't use these titles directly, but they serve to describe the meanings of all binary status bits known to the system, so they should be kept up-to-date.

RDATA EQU 4 ;Read Data Access Table

The Data Access Table describes as a list of instructions how to update the local data pool each cycle. It should preferably be downloaded all at once, as it is always "live."

These are the readings of all binary status bytes (8 binary bits per byte) in the system. They are used as setting values to update the digital hardware during the automatic restore at system reset time. Although one should issue settings for each byte to download this correctly, it is probably easier to perform a system reset.

PAGEP EQU 6 ;Page pointers

The 160-character page titles and associated page program names are kept in this table. It can be downloaded if no page program is active.

PAGEM EQU 7 ;Page private memory

Page context is maintained in this table. It can be downloaded, but it should also bedone only when no page program is active.

LISTP EQU 8 ;Active list pointers

This is a dynamic table of “list#s” associated with actrive data requests. Downloading is neither necessary nor desired.

CODES EQU 9 ;Downloaded named programs

This is a directory for the memory-resident file system that is used to house downloaded page and local applications in non-volatile memory. This cannot be downloaded; rather, it is automatically filled as programs are downloaded via TFTP or copied into the system using the Download page.

CDATA EQU 10 ;Comment alarm data

These records contain alarm flags and counts for comment alarms, such as system reset and alarms reset “events.” Usually these are marked disabled in Acnet.

BADDR EQU 11 ;Binary byte addresses

For each binary byte there is an address that is used for accessing the byte of data and/or controlling it. This table of addresses can be downloaded as needed.

OUTPQ EQU 12 ;Output pointer queue

This is a dynamic table used for a token ring message queue. It should not be downloaded.

PRNTQ EQU 13 ;Print message queue

This is a dynamic table that houses the serial port output queue. It should not be downloaded.

This table holds the list of local application instances and associated parameter values. To download this table, first insure that all local applications presently running, if any, are disabled. Each entry to be downloaded must be modified to have a null static variables pointer and the “last status” cleared to indicate inactive.

CPROQ EQU 15 ;Co-processor message queue

This table’s records identify the location and size of coprocessor message queues located in shared memory. They are not used in Acnet stations.

MMAPS EQU 16 ;Memory-mapped templates

Entries in this table support selective downloading into special hardware memory boards via vertical interconnect. It is used only for D0, which probably already has a means of downloading the needed board templates.

Q1553 EQU 17 ;1553 controller queue ptrs

Dynamic table for D0 1553 rack monitors. Downloading inappropriate.

DSTRM EQU 18 ;Data streams

Defines location and sizes of data streams. Entry #0 and #1 are standard and used in all stations. #0 provides for network frame diagnostics. #1 supports a settings log. Additional data streams may be defined and downloaded for other purposes. Extensively used in D0 high voltage systems. A system reset is required to initialize the related data stream queues.

SERIQ EQU 19 ;Serial Input Queue

Dynamic queue of serial input data. Downloading inappropriate.

TBL20 EQU 20 ;spare (used by MSU?)

Undefined.

AADIB EQU 21 ;Analog alarm device info block (D0)

Analog alarm device info used in D0 downloadable by D0 utility.

BADIB EQU 22 ;Binary alarm device info block (D0)

Binary alarm device info used in D0 downloadable by D0 utility.

CADIB EQU 23 ;Comment alarm device info block (D0)

Comment alarm device info used in D0 downloadable by D0 utility.

DSTAT EQU 24 ;Combined status words specifications (Acnet)

Table entries define construction of 16-bit word binary status words. Table can be downloaded. Entries are referenced by Data Access Table entries type $26.

TBL25 EQU 25 ;spare

Undefined.

TBL26 EQU 26 ;spare

Undefined.

IPNAT EQU 27 ;IP Node Address Table (node#s, IP addresses)

This table is a cache of IP addresses received from DNS queries based on nade# names of the form NODE0576, for example. It can be downloaded. The important part is the header that includes the IP address of the DNS node and an up-to-16-character default suffix for node names NODExxxx.

IPARP EQU 28 ;IP “ARP” Table, incl IP security table

From scratch, this Internet Protocol table’s header is automatically initialized at reset time. Then additional info must be filled in, such as station’s IP address, subnet mask, gateway IP address and MTU’s. A system reset must then be performed to activate IP support.

DIAGQ EQU 29 ;Alloc,Liber diagnostic queue (optional)

Downloading inappropriate.

TRING EQU 30 ;Token Ring Network Table

Some parts of this table can be downloaded. It provides much of the basic network, especially token ring, support.

DLOAD EQU 31 ;Download area (last word: table directory entry cksm).

From scratch, initialized empty at system reset time. Automatically filled by programs that are downloaded via TFTP or copied via the Download page. Downloadingthis “table” directly is inappropriate. Usually 192K bytes in size.